

REMARKS

In the first Office Action, dated April 6, 2005, the Examiner rejects claim 1 under 35 U.S.C. § 103(a) as unpatentable over MCCLURE et al. (U.S. Patent No. 5,790,770) in view of BASSO et al. (U.S. Patent No. 6,690,678); rejects claims 2, 3, 5, and 6 under 35 U.S.C. § 103(a) as unpatentable over MCCLURE et al. in view of BASSO et al., and further in view of BIANCHINI et al. (U.S. Patent No. 6,526,024); and rejects claim 4 under 35 U.S.C. § 103(a) as unpatentable over MCCLURE et al. in view of BASSO et al., and further in view of FUKANO et al. (U.S. Patent No. 6,775,287). Applicants respectfully traverse these rejections.

By way of the present amendment, Applicants amend the specification to improve form. Applicants further add new claims 7-9. No new matter has been added by way of the present amendment. Claims 1-9 are pending.

Claim 1 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over MCCLURE et al. in view of BASSO et al. Applicants respectfully traverse this rejection.

Independent claim 1 is directed to an ATM switch that includes one or more input side circuit interfaces; one or more output side circuit interfaces; and an ATM core switch for outputting cells inputted thereto from the input side circuit interface or interfaces to the output side circuit interface or interfaces. Each of the output side circuit interfaces feeds back a cell number accumulated for each virtual channel to a corresponding one of the input side circuit interfaces. Each of the input side circuit interfaces shapes the rate of cells based on the feedback from a corresponding one of the output side circuit interfaces so that a peak cell rate total value of virtual channels which belong to a virtual path may not exceed a peak cell rate of the virtual path. Each of the output side circuit interfaces controls, based on the cell number accumulated

for each virtual channel, so that the peak cell rate of the virtual path to which the virtual channels belong may not exceed the peak cell rate total value of the virtual channels which belong to the virtual path. MCCLURE et al. and BASSO et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, MCCLURE et al. and BASSO et al. do not disclose or suggest each output side circuit interface feeding back a cell number accumulated for each virtual channel to a corresponding one of the input side circuit interfaces. The Examiner appears to rely on MCCLURE et al. for allegedly disclosing this feature (Office Action, pg. 3). Yet, the Examiner also appears to admit that MCCLURE et al. does not disclose this feature and alleges "it is strictly a design decision whether to send a general message to the input t side when the output buffer is filled or to send the actual cell count to the input side on a continuous basis as both methods incorporate monitoring, counting and messaging on a real time basis" (Office Action, pg. 3). Applicants submit that the Examiner has not established a *prima facie* case of obviousness with respect to claim 1.

A proper rejection under 35 U.S.C. § 103(a) requires that the Examiner set forth in the Office Action (1) the relevant teachings of the prior art reference(s) relied upon, preferably with reference to the relevant column or page number(s) and line number(s) where appropriate, (2) the difference or differences in the claim over the applied reference(s), (3) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter, and (4) an explanation why one of ordinary skill in the art at the time the invention was made would have been motivated to make the proposed modification. See M.P.E.P. § 706.02(j). The Examiner's conclusory statement that incorporating each of the output side circuit interfaces feeding back a

cell number accumulated for each virtual channel to a corresponding one of the input side circuit interfaces is a design decision does not explain why one skilled in the art at the time the invention was made would have been motivated to modify MCCLURE et al. to include this feature. As such, a *prima facie* case of obviousness has not been established with respect to claim 1.

Nevertheless, MCCLURE et al. discloses an output queue 20 sending a feed back message to an input queue 16 when the output queue becomes filled to a pre-determined threshold level (see col. 5, lines 61-65). Moreover, MCCLURE et al. specifically discloses that each virtual connection is provided with a unique input queue 16 and output queue 20 (col. 4, lines 6-11). Therefore, MCCLURE et al.'s output queue 20 is incapable of feeding back a cell number accumulated for each virtual channel to a corresponding one of input queues 16, as required by claim 1.

The disclosure of BASSO et al. does not remedy this deficiency in the disclosure of MCCLURE et al. In fact, BASSO et al. does not disclose or suggest an ATM switch that includes one or more input side circuit interfaces and one or more output side circuit interfaces, as required by claim 1.

MCCLURE et al. and BASSO et al. do not further disclose or suggest, as is also recited in claim 1, each of the input side circuit interfaces shaping the rate of cells based on the feedback from a corresponding one of the output side circuit interfaces so that a peak cell rate total value of virtual channels which belong to a virtual path may not exceed a peak cell rate of the virtual path. The Examiner admits that MCCLURE et al. does not disclose this feature (Office Action, pg. 4). The Examiner appears to rely on BASSO et al. for allegedly disclosing "the direct

relationship between the QoS (Quality of Service) and cell rate on a virtual connection" and that "the summation of the peak cell rate of the virtual channels cannot exceed the peak cell rate of the virtual path to which all the virtual channels belong to" (Office Action, pg. 5). These alleged disclosures of BASSO et al. do not specifically address the above feature of claim 1. That is, even if, for the sake of argument, BASSO et al. discloses a direct relationship between QoS and cell rate on a virtual connection and that the summation of the peak cell rate of the virtual channels cannot exceed the peak cell rate of the virtual path to which the virtual channels belong (a point Applicants do not concede), these alleged disclosures of BASSO et al. do not disclose or suggest each of the input side circuit interfaces shaping the rate of cells based on the feedback from a corresponding one of the output side circuit interfaces so that a peak cell rate total value of virtual channels which belong to a virtual path may not exceed a peak cell rate of the virtual path, as required by claim 1. In fact, as set forth above, BASSO et al. does not disclose or suggest an ATM switch that includes one or more input side circuit interfaces and one or more output side circuit interfaces, as required by claim 1. Therefore, BASSO et al. cannot disclose or suggest each of the input side circuit interfaces shaping the rate of cells based on the feedback from a corresponding one of the output side circuit interfaces so that a peak cell rate total value of virtual channels which belong to a virtual path may not exceed a peak cell rate of the virtual path, as also required by claim 1.

MCCLURE et al. and BASSO et al. do not further disclose or suggest each of the output side circuit interfaces controlling, based on the cell number accumulated for each virtual channel, so that the peak cell rate of the virtual path to which the virtual channels belong may not exceed the peak cell rate total value of the virtual channels which belong to the virtual path, as is also

required by claim 1. The Examiner admits that MCCLURE et al. does not disclose this feature (Office Action, pg. 4). The Examiner appears to rely on BASSO et al. for allegedly disclosing "the direct relationship between the QoS (Quality of Service) and cell rate on a virtual connection" and that "the summation of the peak cell rate of the virtual channels cannot exceed the peak cell rate of the virtual path to which all the virtual channels belong to" (Office Action, pg. 5). These alleged disclosures of BASSO et al. do not specifically address the above feature of claim 1. That is, even if, for the sake of argument, BASSO et al. discloses a direct relationship between QoS and cell rate on a virtual connection and that the summation of the peak cell rate of the virtual channels cannot exceed the peak cell rate of the virtual path to which the virtual channels belong (a point Applicants do not concede), these alleged disclosures of BASSO et al. do not disclose or suggest each of the output side circuit interfaces controlling, based on the cell number accumulated for each virtual channel, so that the peak cell rate of the virtual path to which the virtual channels belong may not exceed the peak cell rate total value of the virtual channels which belong to the virtual path, as required by claim 1. In fact, as set forth above, BASSO et al. does not disclose or suggest an ATM switch that includes one or more input side circuit interfaces and one or more output side circuit interfaces, as is required by claim 1. Therefore, BASSO et al. cannot disclose or suggest each of the output side circuit interfaces controlling, based on the cell number accumulated for each virtual channel, so that the peak cell rate of the virtual path to which the virtual channels belong may not exceed the peak cell rate total value of the virtual channels which belong to the virtual path, as also required by claim 1.

Even assuming, for the sake of argument, that the disclosure of BASSO et al. could reasonably be construed to disclose the above feature of claim 1 (a point that Applicants do not

concede), Applicants submit that one skilled in the art would not have been motivated to modify MCCLURE et al. to include this feature of BASSO et al., absent impermissible hindsight. With respect to motivation, the Examiner alleges "[i]t would have been obvious ..., the motivation being to be able to support different ATM services while dynamically adjusting the bandwidth of the virtual connection according to the network load" (Office Action, pg. 5). The Examiner's motivation is merely conclusory and insufficient for establishing a *prima facie* case of obviousness. Moreover, MCCLURE et al. already discloses the ability to dynamically assign bandwidth (see, for example, col. 4, lines 12-29). Therefore, incorporating BOSSO et al.'s alleged disclosure of each of the output side circuit interfaces controlling, based on the cell number accumulated for each virtual channel, so that the peak cell rate of the virtual path to which the virtual channels belong may not exceed the peak cell rate total value of the virtual channels which belong to the virtual path into the MCCLURE et al. system would not allow MCCLURE et al.'s system to dynamically assign bandwidth since MCCLURE et al.'s system already performs this function. Applicants submit that the Examiner's motivation for combining BOSSO et al. and MCCLURE et al. is based on impermissible hindsight.

For at least the foregoing reasons, Applicants submit that claim 1 is patentable over MCCLURE et al. and BOSSO et al., whether taken alone or in any reasonable combination.

Claims 2, 3, 5, and 6 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over MCCLURE et al. in view of BASSO et al., and further in view of BIANCHINI et al. Applicants respectfully traverse this rejection.

Claims 2, 3, 5, and 6 depend from claim 1. The disclosure of BIANCHINI et al. does not remedy the deficiencies in the disclosures of MCCLURE et al. and BASSO et al. set forth above

with respect to claim 1. Therefore, claims 2, 3, 5, and 6 are patentable over MCCLURE et al., BASSO et al., and BIANCHINI et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Moreover, these claims recite additional features not disclosed or suggested by MCCLURE et al., BASSO et al., and BIANCHINI et al.

For example, claim 5 recites an input cell rate control section that stores an input circuit number, a service class, a minimum cell rate, an output switch port number and an intra-switch connection identification number of contents of a contract concluded in advance in a corresponding relationship to a virtual path identifier/virtual channel identifier of an input cell. With respect to claim 5, the Examiner alleges "Basso discloses a traffic contract that includes quality of service, which inherently should include service class and minimum and peak cell rates at the minimum" and points to col. 10, lines 55-60, of BASSO et al. for support (Office Action, pg. 7). Regardless of the veracity of this allegation, the Examiner does not address all of the features recited in claim 5. That is, claim 5 does not merely recite a service class and a minimum cell rate. Instead, claim 5 also recites an input circuit number, an output switch port number, and an intra-switch connection identification number. The Examiner did not address these features. Accordingly, a *prima facie* case of obviousness has not been established with respect to claim 5. If this rejection is maintained, Applicants request that the Examiner address all features recited in claim 5.

For at least these additional reasons, Applicants submit that claim 5 is patentable over MCCLURE et al., BASSO et al., and BIANCHINI et al., whether taken alone or in any reasonable combination.

Similar arguments can be made for Applicants' claim 6. The Examiner did not address

all of the features recited in claim 6. Accordingly, a *prima facie* case of obviousness has not been established with respect to claim 6.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over MCCLURE et al. in view of BASSO et al., and further in view of FUKANO et al. Applicants respectfully traverse this rejection.

Claim 4 depends from claim 1. The disclosure of FUKANO et al. does not remedy the deficiencies in the disclosures of MCCLURE et al. and BASSO et al. set forth above with respect to claim 1. Therefore, claim 4 is patentable over MCCLURE et al., BASSO et al., and FUKANO et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1.

New claims 7-9 recite features not disclosed or suggested by the art of record. For example, independent claim 7 is directed to a switch that includes an input processing section and an output processing section. The input processing section is configured to receive cells via a plurality of virtual channels (VCs) of a virtual path (VP), and output cells for each VC at a rate equal to or higher than a minimum cell rate based on a control signal. The output processing section is configured to store the cells from the input processing section for each VC, determine a number of stored cells for each VC, generate the control signal, where the control signal indicates the determined number of cells stored for each VC, transmit the control signal to the input section, determine a number of stored cells for the VP, shape a transmission of the cells from the output processing section based on a peak cell rate of the VP. The art of record does not disclose or suggest this combination of features.

Claims 8 and 9 depend from claim 7. Therefore, these claims are patentable over the art

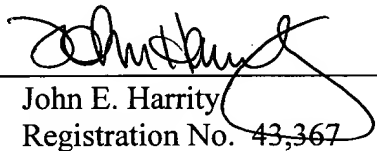
of record for at least the reasons that claim 7 is patentable over the art of record.

In view of the foregoing amendments and remarks, Applicants respectfully request the Examiner's reconsideration of this application and the timely allowance of the pending claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

HARRITY & SNYDER, L.L.P.

By: 
John E. Harrity
Registration No. 43,367

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11240 Waples Mill Road
Suite 300
Fairfax, Virginia 22030
(571) 432-0800